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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/651,539	08/29/2000	Thomas G. Adams	19927-000510US	9913

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TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

TRAN, HAI V

ART UNIT PAPER NUMBER

2611

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/651,539		ADAMS ET AL.	
	Examiner		Art Unit	
	Hai Tran		2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 1-17, 20, 22, 23 and 28-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-19, 21, 24-27, and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Claims 22-26 and 28-29, Applicant argues, "...the combination does not teach the claimed invention because Lang does not clearly teach the limitation of storing a context in the local memory for each DMA channel, which context contains a pointer to a frame descriptor in local memory, each of which contains the specified information regarding the host memory."

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

In this case, Ryan teaches associating each DMA channel with a specific location in the memory of a host computer", see Col. 6, lines 23-26 and the memory allocation for 32 and 16 DMA channels (Col. 7, lines 63-Col. 8, lines 20).

Ryan does not clearly disclose wherein a context is stored in the local memory for each DMA channel, the context including a current transfer target address, a byte count and a pointer into a data structure in the local memory that contains frame descriptors wherein each frame descriptor contains information relating to the memory in the host computer available to the channel, including a pointer to the starting address of a host memory block, the size of the host memory block, any possible segmentation

of the host memory block and a pointer to a next available host memory block; however, Ryan discloses memory allocation for 32 and 16 DMA channels (Col. 7, lines 63-Col. 8, lines 20).

Lang discloses a context is stored in the local memory for each DMA channel, the context including a current transfer target address, a byte count and a pointer into a data structure in the local memory that contains frame descriptors (Fig. 15) wherein each frame descriptor contains information relating to the memory in the host computer available to the channel, including a pointer to the starting address of a host memory block, the size of the host memory block, any possible segmentation of the host memory block and a pointer to a next available host memory block (Col. 17, lines 50-Col. 18, lines 25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan with Lang, so to provide a method of communicating between a multi-channel network device and a host having host memory with associated buffers for supporting a large number of data links operating at high speeds due to the unacceptably high burden of work placed on the microprocessor (Summary of the invention).

As to claims 24-26, Applicant arguments are persuasive; therefore, they have been withdrawn.

Claims 20, 22-23 and 28-30 are cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 17-19, 21, 27, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US 5675654) in view of Lang et al. (US 6188699).

Claim 17, Ryan discloses a method of processing a transport stream comprising:

The steps of parsing the transport stream to derive multiple elementary streams including associated program identifiers (Col. 3, lines 52-54; Col. 4, lines 55-Col. 5, lines 62);

Using the associated program identifier to assign each stream a DMA channel (Col. 5, lines 35-40; Col. 6, lines 23-56);

Associating each DMA channel with a specific location in the memory of a host computer (Col. 6, lines 23-26); and

Performing DMA transfers of the multiple elementary streams to corresponding locations in the memory of the host computer using the DMA channels (Col. 5, lines 12-16; lines 55-Col. 8, lines 20).

Ryan does not clearly disclose wherein a context is stored in the local memory for each DMA channel, the context including a current transfer target

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address, a byte count and a pointer into a data structure in the local memory that contains frame descriptors wherein each frame descriptor contains information relating to the memory in the host computer available to the channel, including a pointer to the starting address of a host memory block, the size of the host memory block, any possible segmentation of the host memory block and a pointer to a next available host memory block; however, Ryan discloses memory allocation for 32 and 16 DMA channels (Col. 7, lines 63-Col. 8, lines 20).

Lang discloses a context is stored in the local memory for each DMA channel, the context including a current transfer target address, a byte count and a pointer into a data structure in the local memory that contains frame descriptors (Fig. 15) wherein each frame descriptor contains information relating to the memory in the host computer available to the channel, including a pointer to the starting address of a host memory block, the size of the host memory block, any possible segmentation of the host memory block and a pointer to a next available host memory block (Col. 17, lines 50-Col. 18, lines 25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan with Lang, so to provide a method of communicating between a multi-channel network device and a host having host memory with associated buffers for supporting a large number of data links operating at high speeds due to the unacceptably high burden of work placed on the microprocessor (Summary of the invention).

Claim 18, Ryan further discloses wherein the multiple elementary streams are transferred between a local memory 318 and the memory (memory data) of the host computer (See Fig. 3; Col. 6, lines 57-32);

Claim 19, Ryan further discloses wherein the multiple elementary streams are transferred between a transport controller 320 and the memory of the host computer (Fig. 3; Col. 6, lines 57-58);

Claim 21, "wherein the DMA transfer is an automatic programmable transport interface operation wherein data is not buffered in a local memory prior to the transfer to the memory of the host computer" is inherently met by Ryan because the DMA transfer only occurs when the received data is buffered (Col. 6, lines 63-Col. 7, lines 40).

Claim 27, apparatus claim is analyzed with respect to method claim 17.

Claim 31, apparatus claim is analyzed with respect to method claim 21.

2. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US 5675654) in view of Lang et al. (US 6188699), and further in view of Fuji et al. (US 6477179).

Claims 24-26, Ryan in view of Lang do not clearly disclose wherein the step of transferring the multiple elementary streams to an end user system comprises transferring the multiple elementary streams through an audio-visual interface; however, Ryan discloses an end user system is an audio-visual system that receives

multiple elementary streams through a channel interface 112 (audio-visual interface)(Fig. 1; Col. 1, lines 5-13).

Fujii (US 6477179) discloses wherein the end user system comprises a networked computer and the step of transferring the multiple elementary streams (digital data stream) to an end user system through a network interface (LAN Interface of the end-user system; Fig. 1-3 and 6; Col. 3, lines 55-Col. 4, lines 10 and Col. 7, lines 19-60). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan and Lang by integrating a network interface connected to a networked computer, as taught by Fujii (US 6477179), so the receiving device outputs digital data received through, for example, a digital satellite broadcast network to a network computer (Col. 1, lines 6-10).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Tran whose telephone number is 703-308-7372. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher C. Grant can be reached on 703-305-4755. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HT:ht
01/21/2005



HAITRAN
PRIMARY EXAMINER